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MONTANA STUDY AND RESULTS OF THE ELK HUNTER PREFERENCE SURVEY

Montana Fish, Wildlife & Parks

By

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And
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July, 2001

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EXECUTIVE SUMMARY

Elk play an important role in Montana's culture, economy and environment. For many, elk hunting is a tradition and a natural use of this wildlife resource. The primary objective of the 1998 *Montana Elk Hunter Preference Survey* was to collect data to learn more about the elk hunters in Montana and to determine whether hunting patterns and expenditures have changed over the last ten years. It was necessary to determine and compare the experiences that hunters were pursuing, what adds to or detracts from a desirable hunting experience, what type of equipment is being used, how often do they hunt, length of their hunting trips, how far they travel, how much they spend, and how much their hunting experience was worth to them.

This was accomplished by comparing the results of the 1988, *Elk Hunter Preference Study* to the 1998 study results. The questionnaire used in this study, mirrored the questions asked in the 1988 study. This provided comparable data information for analysis.

The information provided by respondents is presented, where appropriate, by residency. The residency groups were further divided into guided and non-guided categories. Comparisons of the characteristics of these groups showed many similarities and some significant differences. Not surprisingly, non-residents spent significantly more for their hunting trips than did resident hunters.

The following bullets provide highlights of the data:

- 48% of respondents were Montana residents.

- 94% of respondents were male and their (*median* age was 46, (resident hunters' average age was 42 compared to 47 for non-resident hunters).

- 15% of the respondents said elk hunting was their favorite outdoor recreation activity, 49% said it was one of their favorite, and 35% said it was one of many outdoor recreation activities in which they participated.

- Residents hunted the area for 6 years *(median)*, while non-residents hunted the area 4 years *(median)*.

- 9% of respondents hunted for one day or less on the most recent trip while 36% hunted for two to five days; *median* trip length was 7 days (non-resident's trips averaged two days longer than residents' trips).

- 28% of the non-resident hunters hired an outfitter or guide compared to 1.5% of the residents.

- 20% of the non-residents and 19% of the residents were successful in taking an elk

- 22% of outfitted hunters killed an elk vs 19% of non-guided hunters

- 21% of the respondents harvested other game on their most recent elk hunting trip (25% of the non-residents and 19% of the residents).

- 25% of the sample said that the other hunters' seen affected their enjoyment of the trip.

- The most important reason for hunting was to be outdoors (96%) according to the surveyed hunters, other reasons included: for the solitude (84%), the scenery (84%), because there were lots of elk (83%) and because they liked the natural setting (83%).

- 78% of the respondents said the number of roads open to vehicle use in the area was about right, 11% said there were too many roads for hunting purposes, and 10% said there were too few.

- 51% of the respondents said hunters should be able to retrieve game with vehicles only on open roads, 32% said using closed roads for game retrieval should be allowed, and 18% said hunters should be allowed to use vehicles off roads to retrieve game.

Note: The means are reported for the variables in Appendix B

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INTRODUCTION

OBJECTIVE

Public attitudes about the values of wildlife are changing and the people who hunt in Montana remain a very diverse group. The objective of this study was to collect data on resident and non-resident hunters, in order to learn more about elk hunters in Montana. This study presents trip characteristics, hunter characteristics, expenditure data and information on what type of experiences hunters had on their most recent trip. Hunters' attitudes, beliefs, intentions and behaviors were also studied. Some traveled 1225 miles to hunt and others walked out their back door. Some spent $1770 on their hunting trip and others $130. Some hunted for meat, some for trophies, most for the pleasure of being outdoors and enjoying the solitude and beauty that goes with it. These descriptive statistics gain interpretive value when the hunters are grouped by such factors as residency and guided or non-guided. The1998 elk study's findings are compared to the statistics in the study done in 1988, to aid in assessing change and defining differences.

BACKGROUND

Elk are important to the hunting experience, but other aspects of the hunt, such as the scenery, management regulations, access or numbers of hunters may be equally important. The physical, social, and managerial components of the hunting experience are important when managing big game hunting opportunities.

There is no "average" hunter; hunting like other recreational activities, means different things to different people, and is done in many different styles, in many different areas, by many different people.

SURVEY METHODS

To obtain a valid sample, names were drawn at random from a list of resident and non-resident license holders who hunted elk in Montana during the 1997 season. Two thousand surveys were sent out with 1000 mailed to residents and 1000 mailed to non-resident hunters the end of March, 1998. The surveys were sent out using a modified Dillman method for mail surveys. Hunters were first sent the questionnaire (see Appendix A), a cover letter and a stamped, addressed return envelope. One week later a post card reminder was sent to all hunters asking them to return the survey and thanking them for their participation. Finally a second copy of the questionnaire was sent to those respondents who had not sent in the first questionnaire. This methodology resulted in 1232 surveys being returned with an overall response rate of 62%.

QUESTIONNAIRE CONTENT

The most recent trip was selected because the hunters would be likely to remember it, minimizing potential recall bias. However, the most recent trip might not represent hunter' trips over the season, especially in terms of harvest success. The questionnaire first asked how long and how much the respondent had hunted elk and how elk hunting compared to their other recreation activities. The next section asked about specific aspects of their most recent elk hunting trip in Montana, including to which hunting areas the trip was made, trip length, equipment used, elk seen and taken, and whether a guide was employed.

The next section asked hunters about the social setting on their last hunt– how many other hunters they saw, whether this was more or fewer hunters than expected, and if the other hunters affected their hunting enjoyment. Hunters affected not only the elk population, but each other, competing for game or disrupting others' hunting. The social setting also had many positive effects. Hunters were asked to rate the importance of 16 reasons for choosing to hunt in that area. In addition, demographic and other background information collected included age, gender, residence, employment status, education, income, and membership in hunting, sport, or environmental clubs or organizations. These variables were useful in understanding hunter' desired experiences and management preferences.

RESULTS

The results presented in this report represent an analysis of the information provided by the 1232 respondents. The respondents' were grouped by residency as well as by whether they hired an outfitter. Some respondents left some questions blank and all unanswered questions are given a ".", meaning missing.

An outfitter/guide was hired by 28% of the non-resident hunters in 1998 which is down some from the 32% employing big game guides in 1988. There were still very few residents (1½%) who employed the services of a guide.

Table 1
MONTANA ELK HUNTING
Crosstabulation of Residency & Guide Classifications

Resident Hunters	555
Non-resident Hunters	607
Missing	70
Total Hunters	1232

	Resident	Non-resident
Guided Hunters	8	165
Non-guided Hunters	523	432
Missing Values	24	10
Total Hunters	555	607

ELK HUNTER CHARACTERISTICS

This section reports information about the 1232 hunters who returned the survey. All averages are the median unless otherwise noted.

- 94% of the respondents were male and their average age was 46. Resident hunters' average age was 42 compared to 47 for non-resident hunters. (The 1988 CVM survey reported that 95% were men and their average age was 38; eight years younger than in 1998. Resident hunters' average age was 37 and non-resident hunters' average was 43 in the 1988 survey.)

- 73% were employed full-time, 5% part-time, 2% unemployed and 13% retired. (In 1988 there were fewer hunters employed full-time (66%), fewer retired (9%), more employed part-time (7%) and more unemployed (6%).)

- 30% finished high school, 29% attended college, 18% obtained a degree, 6% did some postgraduate work, and 10% had a postgraduate degree. (In the 1988 study, a few more finished high school (33%), and fewer attended college (28%), and went on to obtain a degree (14%), did some postgraduate work (5%), and received a postgraduate degree (8%).)

- The gross household income varied widely, with 3% under $5,000, 12% over $75,000, and 14% over $100,000. The average income for Montana resident hunters was $35,000-$39,999, non-resident hunters was $50,000-$74,999 and the overall average income was $40,000-$49,000. (In 1988 the average income for elk hunters was $25,000-$30,000; the 1988 study was not broken down by residency.)

- They had been elk hunting an average of 11 years; residents an average of 18 years and non-residents an average of 12 years. (In 1988 elk hunters, overall, had been hunting an average of 10 years, residents 15 years and non-residents an average of 8 years.)

- They hunted an average of 8 days per year, nearly all of which were in Montana. (In 1988 they hunted an average of 10 days per year, nearly all of which were in Montana.)

- 15% rated elk hunting as their favorite outdoor recreation activity, 49% said it was one of their favorite, and 35% said it was one of many outdoor recreation activities in which they participated. (The 1988 study showed 16% rated elk hunting as their favorite outdoor recreation activity, 49% said it was one of their favorite, and 34% said it was one of many outdoor recreation activities in which they participated.)

- 49% of the respondents were a member of a hunting, conservation, or sport organization, while 78% of those who hired a guide were a member. 31% of the Montana residents and 66% of non-residents reported as being a member of such organizations. (In 1988 slightly fewer, of the Montana residents (30%) and non-residents (60%) were members of hunting, sport, or environmental organizations.)

Table 2 summarizes the similarities and differences between hunters in the four subgroups. Resident and non-guided hunters spent more time hunting each year than did non-resident and guided hunters. Non-resident and guided hunters were more likely to belong to a conservation organization than resident hunters. The percentage of hunters who were successful in taking an elk was relatively stable across all four groups, but the hunters who hired an outfitter/guide were slightly more successful. Interestingly enough, in 1988 the guided hunters were much more successful in taking an elk. The average income of non-resident hunters is nearly twice that of resident hunters.

Nineteen percent of the resident hunters were successful in killing an elk in 1998, while only 17% of the resident hunters were successful in 1988. Twenty percent of the non-resident hunters were successful in 1988 and in 1998.

In 1998 fewer antlered elk were taken by both resident and non-resident hunters than in 1988. (In 1988 81% of the resident hunters and 78% of the non-resident hunters took antlered elk).

Table 2
MONTANA ELK HUNTING
Summary of Hunter Characteristics, 1998

Characteristic	Resident	Resident/ Guided	Non-resident	Non-Resident/ Guided
Avg. Number of Years Hunting	18	- *	12	7
Avg. Days Per Year Spent Hunting	11	-	7	8
% Belonging to a Conservation Club	31%	-	66%	80%
% Successful in Killing Elk	19%	-	20%	24%
Antlered Taken	41%	-	65%	95%
Average Income (Mean)	$30000-34999	-	$50000-74999	$50000-74,999

*The sample size was not adequate for analysis, only 1.5% of Montana residents hired an outfitter/guide.

MOST RECENT HUNTING TRIP

Much of the questionnaire asked about respondents' most recent elk hunting trip.

- This was the first time in this hunt area for 35% of the respondents, however both residents and non-residents had hunted the area an average of 2 years. (In 1988, 31% were making their first visit to the hunting area and the average years hunting the area was 5.)

- 9% hunted for one day or less, while 17% hunted for two to three days, and 19% for four or five days; the average trip length was 7 days. (In 1988 13% hunted one day or less, 21% hunted two to three days, and 18% hunted for four or five days.)

- Resident and non-resident hunters both spent about 8 hours a day hunting, the same as in 1988.

- 85% used a rifle, compared to 99% in 1988.

- 28% of the non-resident hunters hired an outfitter/guide, compared to 1.5% of the Montana resident hunters. (The 1988 study showed that 32% of the non-resident hunters hired an outfitter/guide and slightly more than 1% of the Montana residents hired an outfitter/guide.)

- 20% of all respondents were successful in taking an elk, 41% were antlered and 59% were antlerless.

- 19% of Montana resident hunters were successful in killing and elk, with 41% were antlered and 59% were antlerless.

- 20% of non-resident hunters were successful in killing an elk, with 65% being antlered and 35% being antlerless.

- 22% of the hunters who hired an outfitter or guide harvested an elk, compared to 19% of the hunters who did not hire an outfitter or guide. (In 1988 significantly more hunters who hired an outfitter (31%) were successful and fewer of the hunters who didn't hire an outfitter were successful (17%).)

- Of the residents' antlered elk, 19% had one point on side 1 and 31% had six points on side 1.

- Of the non-residents' antlered elk, 12% had 1 point on side 1 and 24% had 6 points on side 1.

The1988 Elk Survey showed that 81% of the elk taken by resident hunters were antlered and 78% taken by non-resident hunters were antlered. This is almost twice as many antlered elk as reported taken in the 1998 Elk Survey by residents. A comparison of the regulations may indicate there were higher numbers of available elk, if more elk were available, then more licenses would be issued and probably more elk would be taken. The Elk Harvest Survey for license year 1996 showed 12,038 bulls were killed statewide, with 75% being taken by resident hunters. For license year 1995, there were 10,131 bulls taken statewide, with 74% being taken by resident hunters. There could be several reasons for the disparity between the 1988 and 1998 numbers: the way the question was read and interpreted, availability of elk, and possibly the number and type of licenses issued.

- 25% of the non-residents and 19% of the residents harvested other game on their most recent elk hunting trip. (In 1988 more non-residents (40%) and more residents (33%) harvested other game.

- 66% of the other animals taken were mule deer, 33% white tailed deer, and 2% were bear. (In 1988, the same percent of mule deer were taken (66%), while 30% were white tailed deer, and 2% were bear.)

- The average number of miles walked was 6, the same as shown in the 1988 study.

- 32% were alone in their vehicle, 35% were with one hunter, 21% with two others, and 8% with three others. (In 1988 fewer were alone in their vehicle (13%), more were with one other hunter (41%), more were with two others (29%), and more were with three others (12%).)

Table 3
MONTANA ELK HUNTING--1998
Hunters Use of Equipment by Residency

	Resident			**Non-resident**	
	1998	***1988***		***1998***	***1988***
Dirt Bike/ATV	8%	4%		11%	4%
Horse	15%	22%		26%	37%
Binoculars	82%	80%		93%	86%
Topographic Maps	28%	29%		51%	50%
Backpacking Tent	5%	6%		10%	14%
Wall Tent	12%	16%		27%	30%
Snowmobile	2%	2%		1%	1%
Elk Bugle	12%	14%		24%	17%
Camera	31%	29%		68%	65%
Spotting Scope	30%	22%		44%	31%
Trailer	15%	15%		18%	14%
Motor Home	2%	3%		3%	5%

- Only 20% of the respondents said they didn't see any other hunters. The average number of other hunters seen was 8, similar to the 1988 study where the average number of other hunters seen was 9.

- 44% said the number of other hunters seen was about as many as expected, 23% said it was more, and 15% said it was fewer than expected. (In 1988 there were more who felt the number of other hunters seen was about as many as expected (49%), 34% who said it was more than expected , and 17% said it was fewer than expected.)

- One-fourth (25%) of the sample said that the other hunters affected their own enjoyment of the trip, compared to the 1988 study where one-third (33%) said that the other hunters affected their own enjoyment of the trip.

DESIRED EXPERIENCES

Hunters' behaviors and management preferences should have been based in part on the type of experience they were seeking. The operational definition of this was hunters' reasons for choosing to hunt where they did on their most recent trip.

Table 4 lists hunters' reasons for hunting, in order of importance (computed by adding together the percentage of those who said each reason was "very important" or "important"), based on the 1998 Elk Hunting Survey. The findings were then compared with the 1988 CVM study. Of the five most important reasons people hunted where they did, only one involved the presence of elk. Though obviously critical, elk are only one part of the overall elk hunting experience. Hunters valued the opportunities to be outdoors, alone or with a few others, in a natural setting with pleasant scenery. As we see in Table 4, these reasons were the same as in 1988. In both the 88 and 98 study "To Be In The Outdoors" was the number one reason given for hunting the area on the trip. Social reasons for hunting, such as being with one's family or going hunting with friends, were far down the list, as were hunting close to home and good road access. Of the two items traditionally viewed as the main reasons for elk hunting; hunting for meat was rated as a more important reason than taking a trophy.

Interestingly enough, while both residents and non-residents rated the value of being outdoors as *most* important, non-residents rated it slightly more important than did resident respondents. Montana's natural environment and its opportunities for solitude are still a big draw for out-of-state hunters who may live in places not having comparable outdoor environments.

Table 4

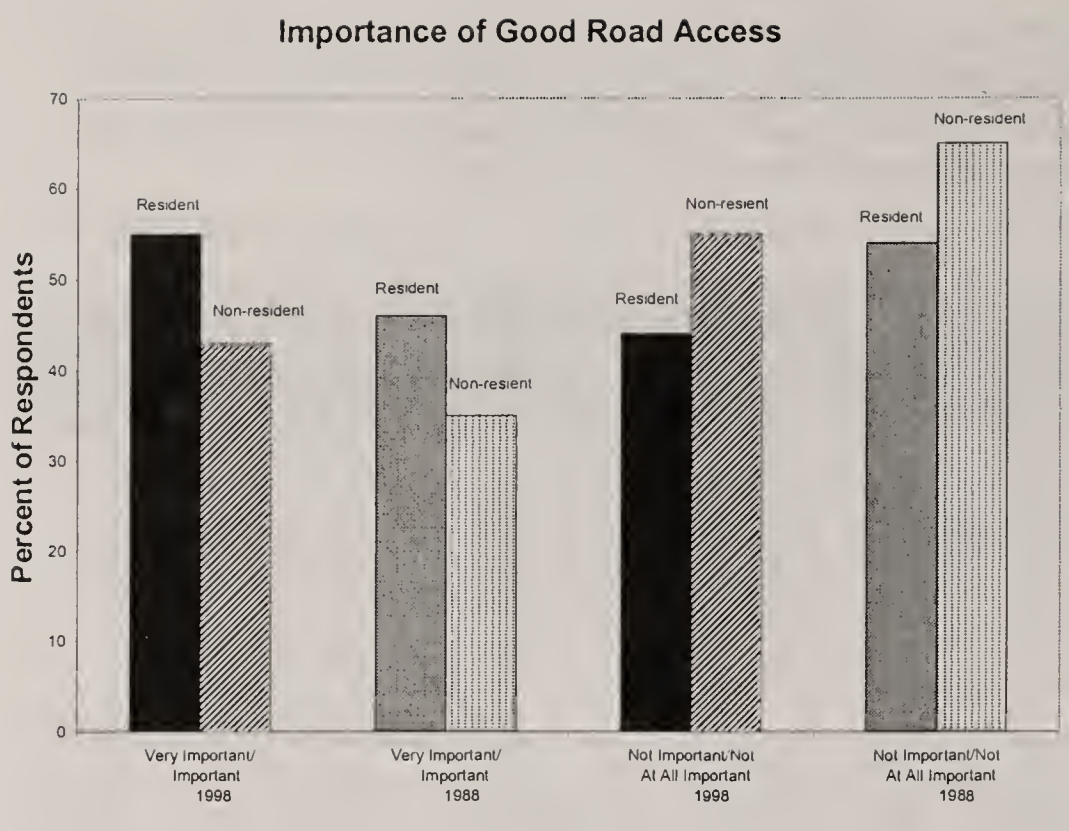
MONTANA ELK HUNTING—1998

Reasons for Choosing Hunting Location

(Results are in percent, listed in order of importance, Very Important and Important are figured together)

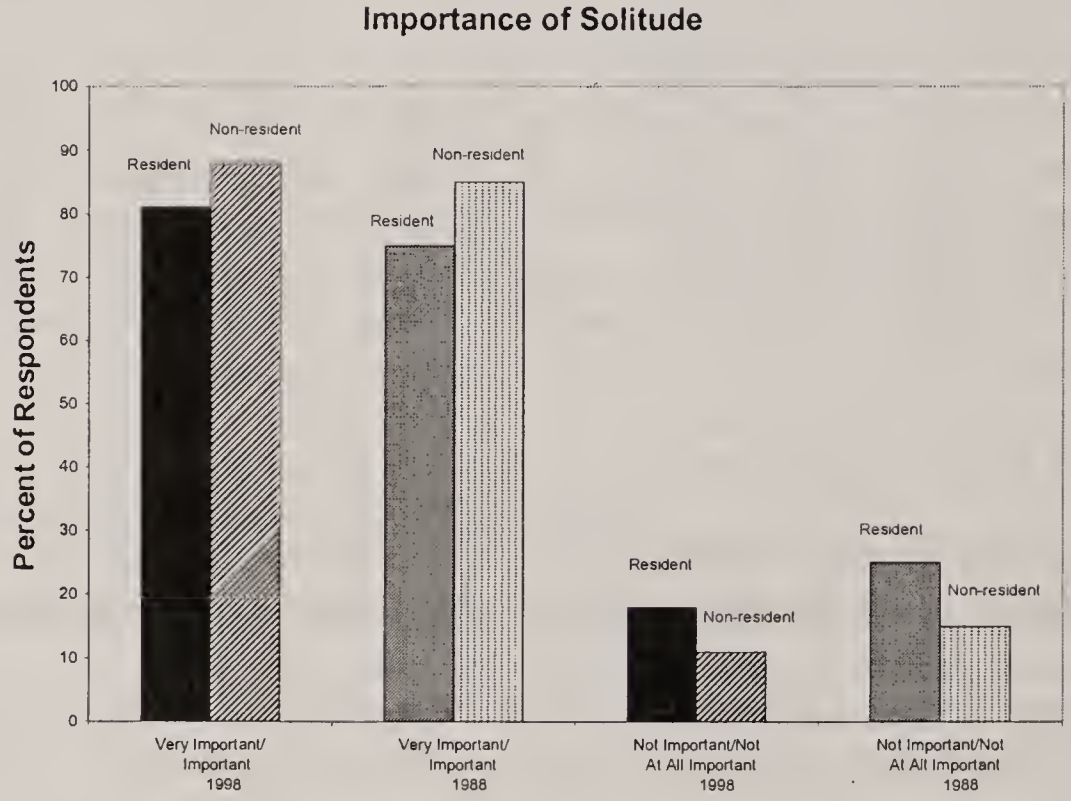
Reason	Very Important		Important		Not Very Important		Not At All Important	
	1998	*1988*	*1998*	*1988*	*1998*	*1988*	*1998*	*1988*
To Be Outdoors	58	57	38	37	3	4	1	2
For The Solitude	37	36	47	43	10	16	3	5
To View The Scenery	32	30	52	49	12	14	4	6
Many Elk In Area	31	30	52	52	13	15	2	3
Be In Natural Setting	32	31	51	49	13	13	3	7
Avoid Other Hunters	29	30	44	38	21	21	5	11
For The Meat	29	32	42	36	22	21	8	10
Past Hunting Good	21	23	48	50	17	17	6	10
Hunt With Family	29	22	31	30	22	19	16	29
Test Hunting Skills	17	17	42	39	29	27	11	18
Be In Rugged Country	21	20	38	34	31	32	9	13
Where Friends Going	16	14	34	27	23	23	21	36
Good Road Access	12	11	36	31	34	34	17	23
Take Trophy Elk	15	15	25	20	40	34	19	30
Special Permit For Area	18	9	21	12	28	18	27	61
Close To Home	12	17	21	26	28	24	37	33

The following graphs provide detailed differences/similarities between resident and non-resident hunters' responses about the importance of these factors to their hunting experience.



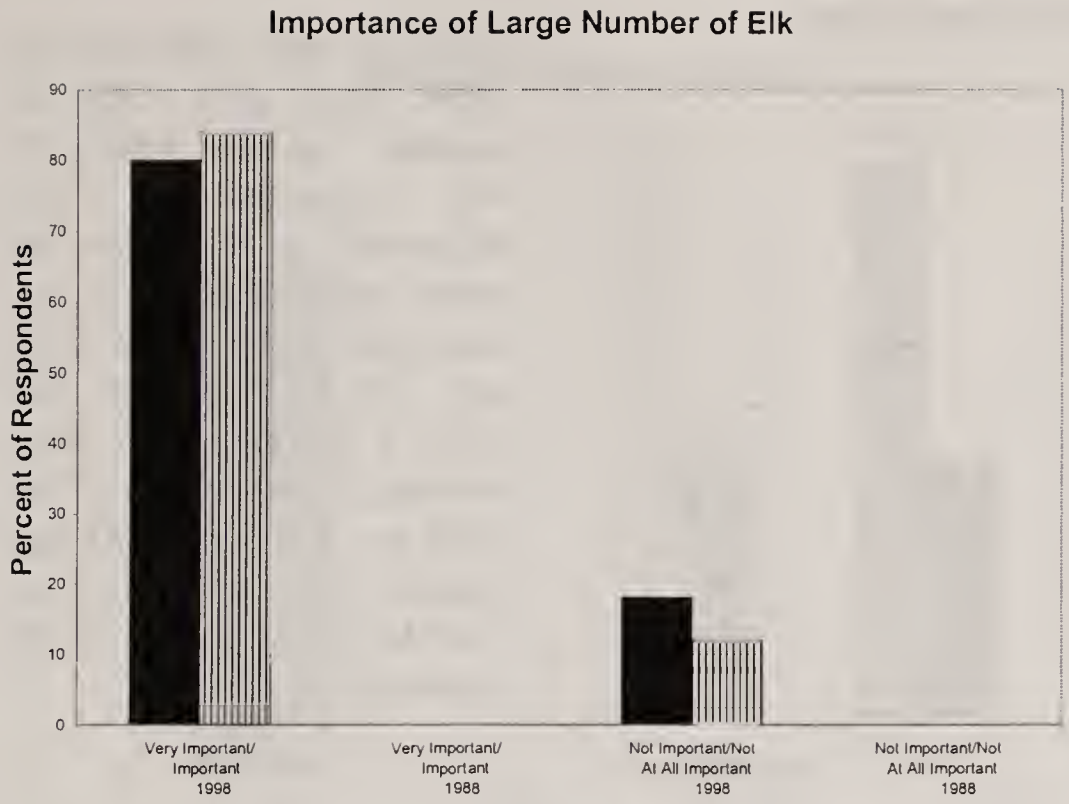
In 1998, 55% of the resident hunters felt that good road access was "Very Important to Important" compared to 46% in 1988. In 1998, 44% of the residents and 55% of non-residents felt it was "Not Important or Not At All Important", while more resident hunters (54%) and non-resident hunters (65%) felt the same in 1988.

Graph 1



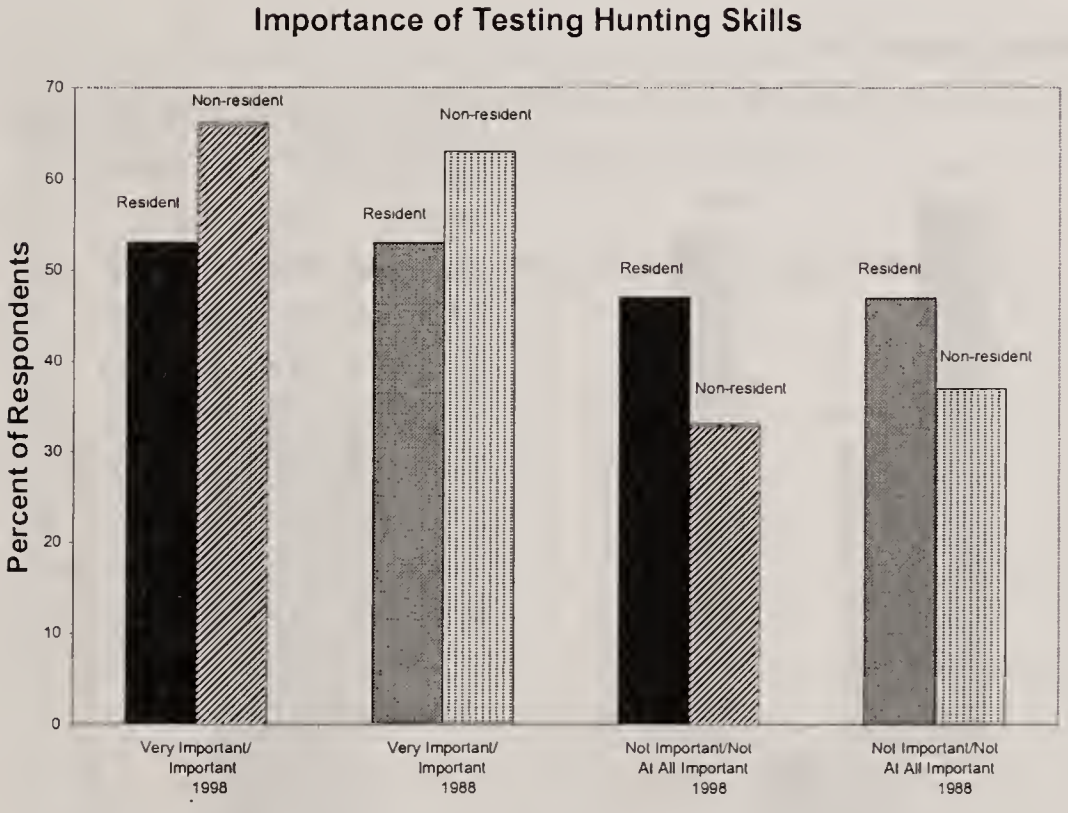
Solitude was rated as "Very Important to Important" in both the 1998 and 1988 studies, by a majority of resident and non-resident hunters.

Graph 2



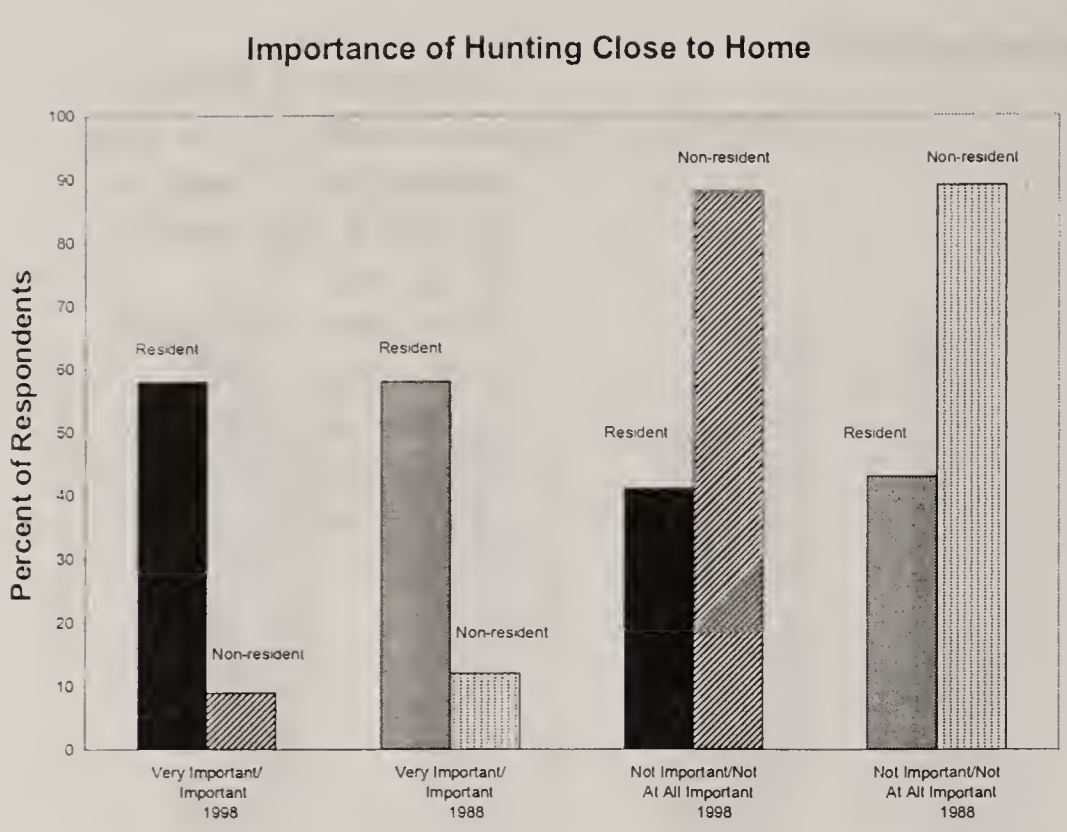
Graph 3

A majority of both the resident (80%)and non-resident (84%) hunters felt that a large number of elk was "Very Important to Important" to their hunting experience. There is no data available in 1988 to make a comparison.



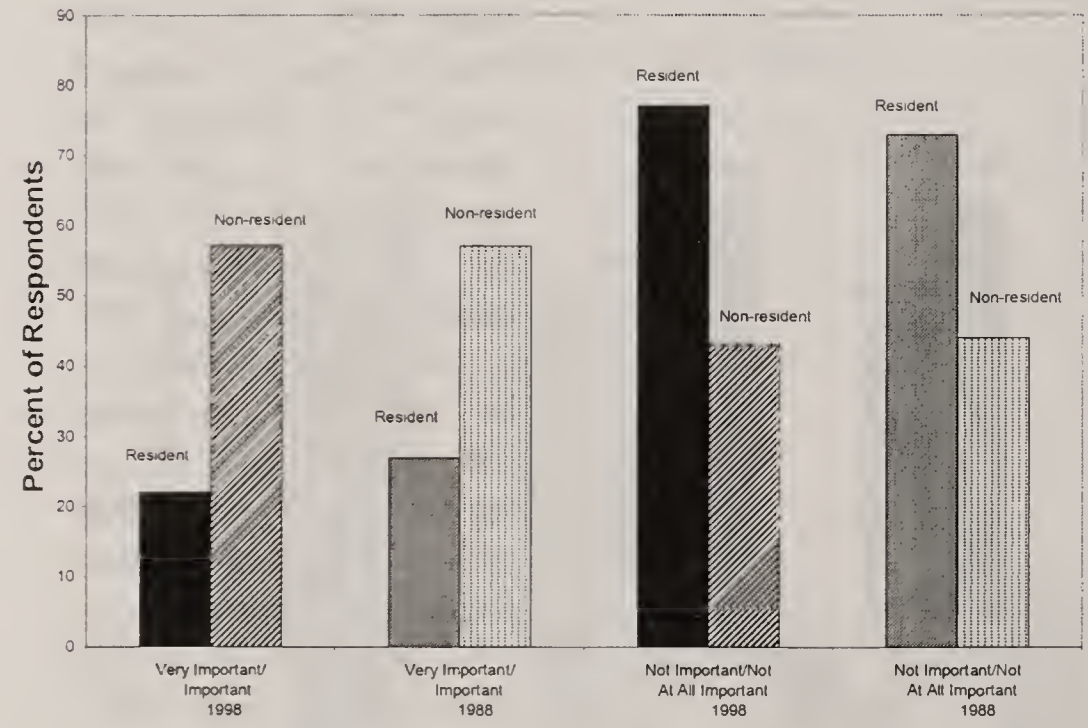
Graph 4

The 1998 and 1988 studies mirrored each other with 53% of the resident hunters stating it was "Very Important to Important" to test their hunting skills, with 66% of the non-resident hunters in 1998 and 63% of non-resident hunters, in 1988. Graph 4 shows the same is true of the resident (47% in 1998 and 1988) and non-resident hunters (33% in 1998 and 37% in 1988)) who felt testing their hunting skills was "Not Important to Not Important At All".



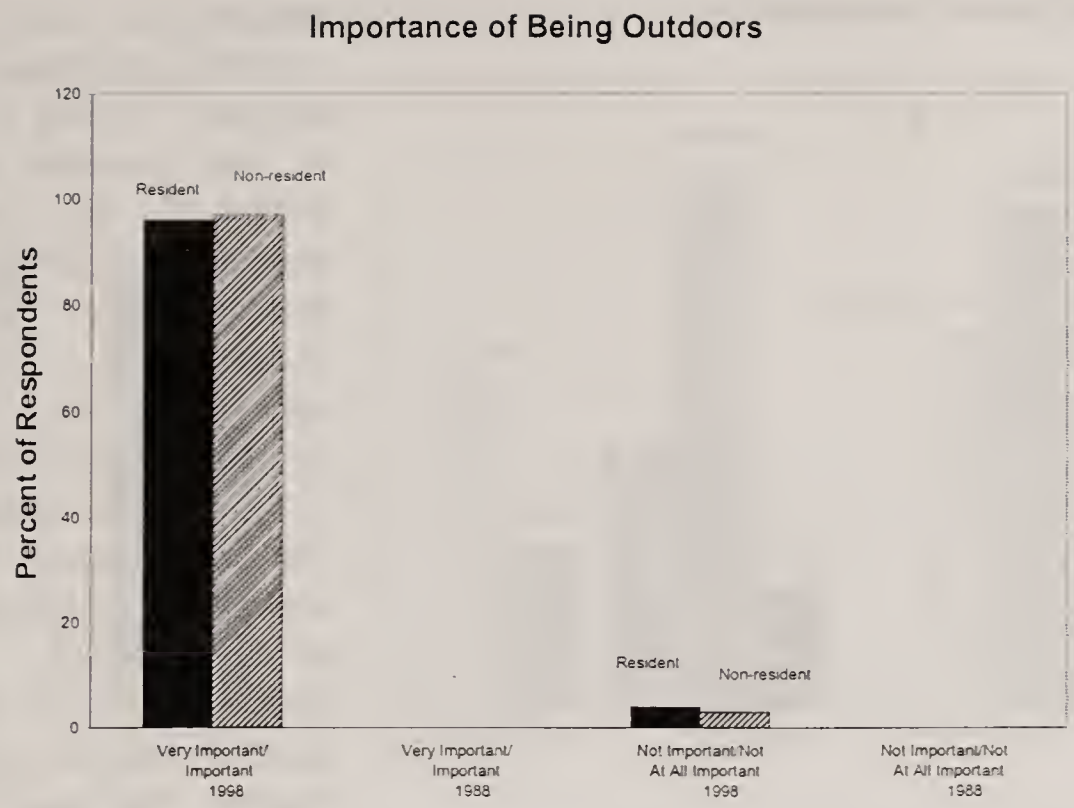
Graph 5

The 1998 study mirrored the 1988 study with 58% of resident hunters stating it was "Important to Very Important" to hunt close to home, while only 9% of the non-resident hunters in 1998 and 12% in 1988 felt the same. A majority of the non-resident hunters (88% in 1998 and 89% in 1988) felt hunting close to home was "Not Important to Not at all Important".



Graph 6

Hunter attitudes about the importance of taking a trophy elk have not changed much since the 1988 study. Only 22% of the resident hunters in 1998 and 27% in 1988 felt that "Taking a Trophy Elk" was "Important to Very Important", while 57% of the non-resident hunters felt the same in 1998 and in 1988.



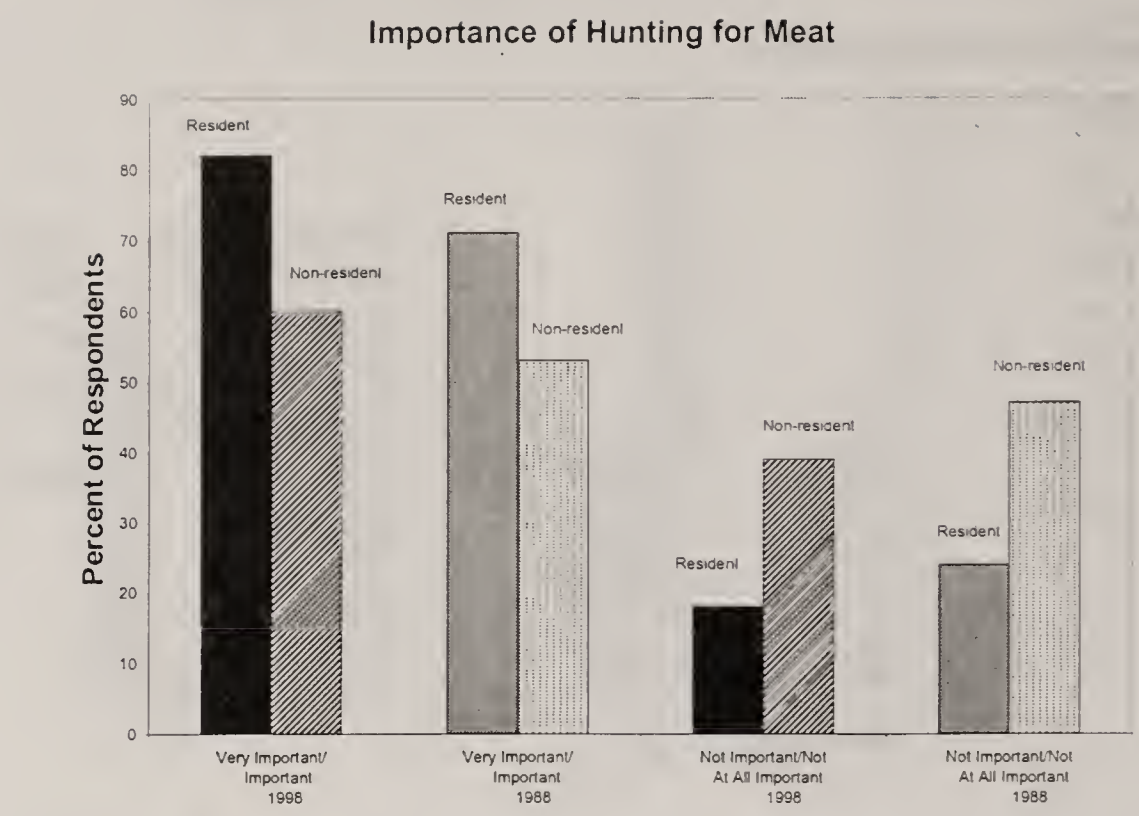
Resident and non-resident hunters alike rated being outdoors as a significant factor in the enjoyment of their hunting experience.

Graph 7

There is insufficient data from the 1988 study to compare the rating of the importance that resident and non-resident hunters placed on the "Importance of Being Outdoors" and the "Importance of Good Hunting in the Area".

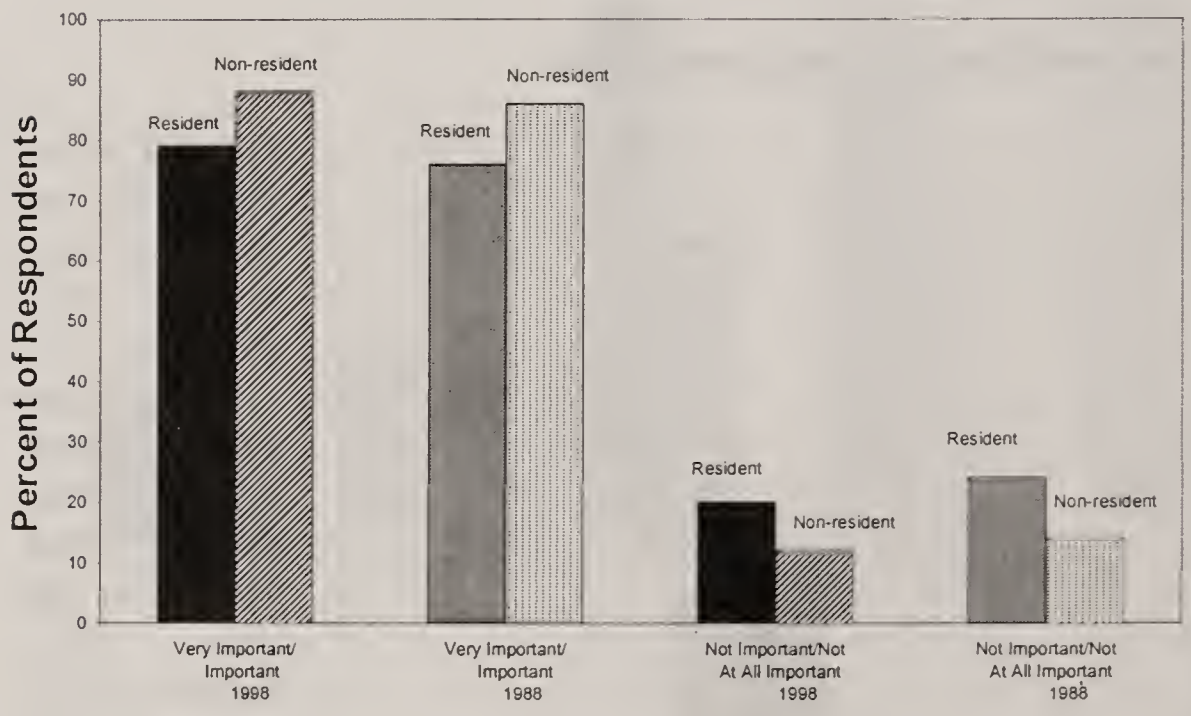
Graph 8 shows that 72% of the resident hunters and 69% of the non-resident hunters rated the imporance of good hunting in the area they chose as "Very Important to Important".

Graph 8



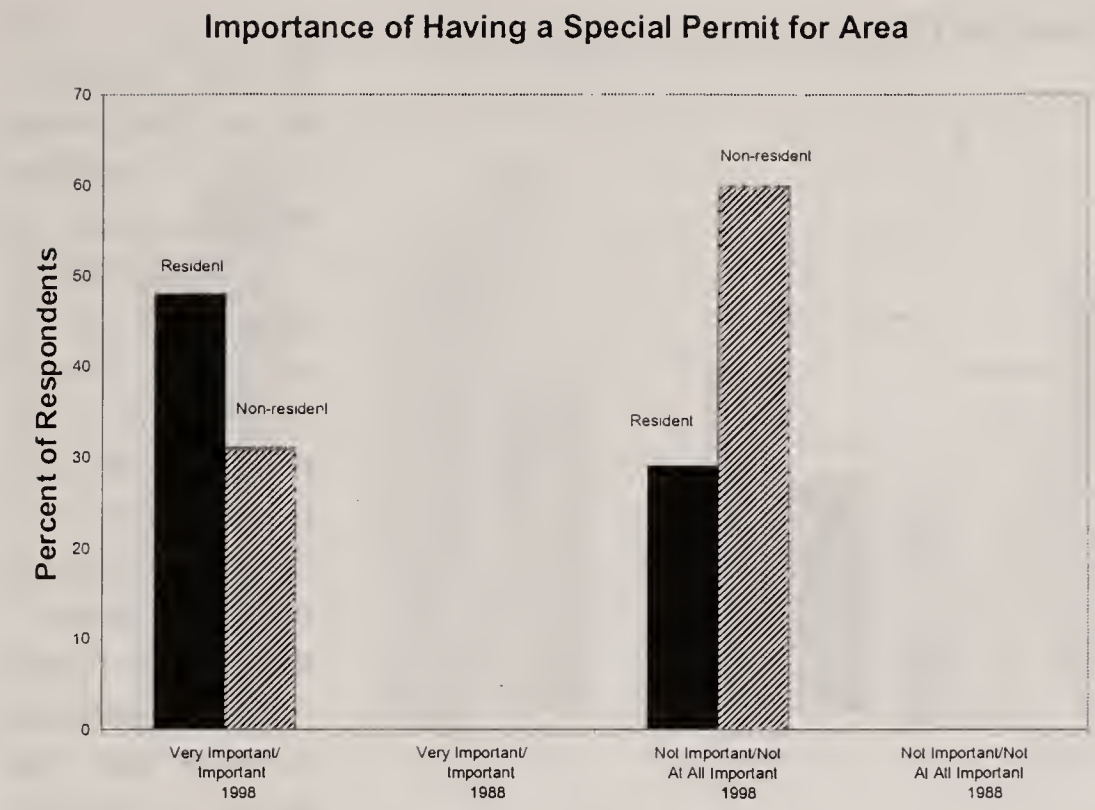
Graph 9

Hunting for meat has remained important to hunters. In 1998 82% of the resident and 60% of the non-resident hunters stated that it was "Very Important to Important", with 71% of resident hunters and 53% of non-resident hunters valuing the importance of hunting for meat in 1988. Only 18% of the resident hunters rated hunting for meat as "Not Important to Not at all Important", with 39% of the non-resident hunters rating it as "Not Important to Not at all Important in 1988.



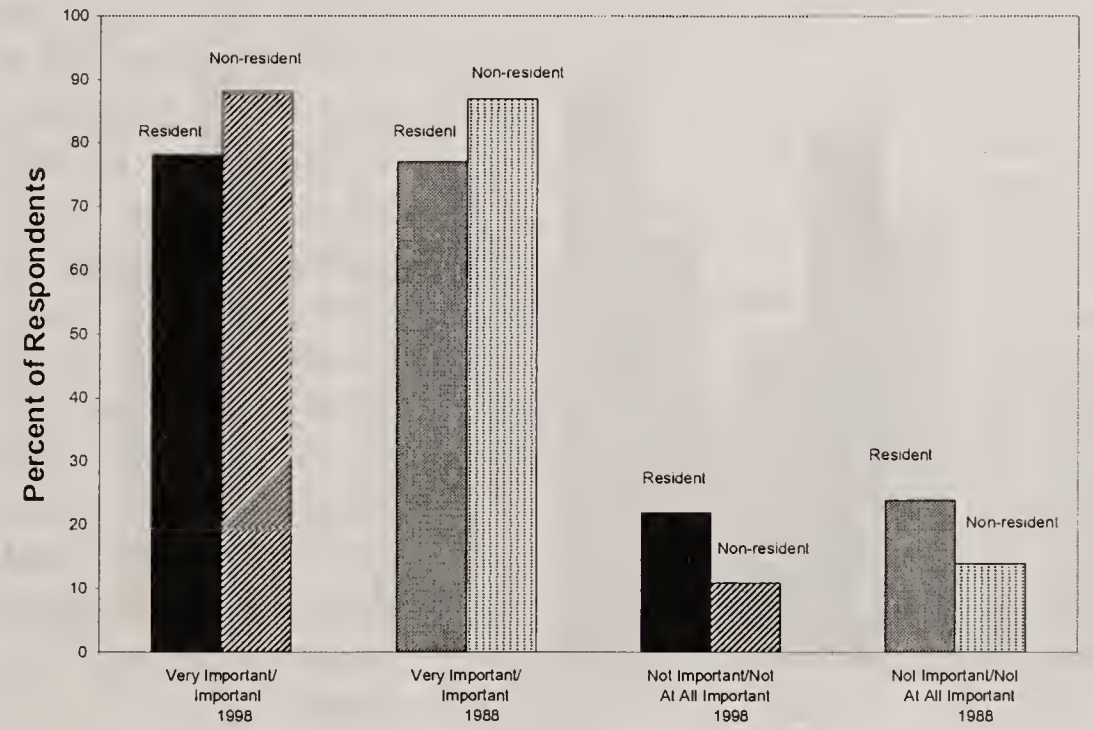
Graph 10

Viewing the scenery was important in 1988 and is still valued in 1998, with 79% of the resident and 88% of the non-resident hunters stating that it is "Important to Very Important".



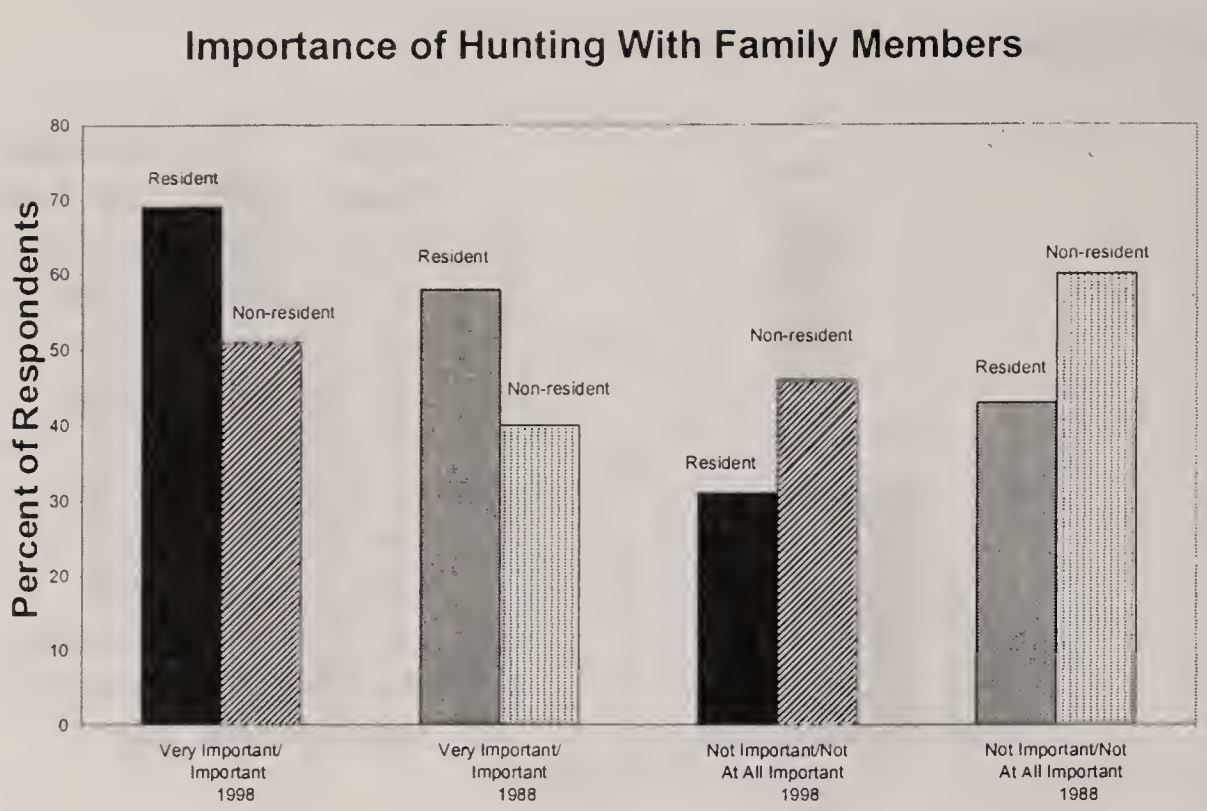
Most non-resident hunters (60%) felt that having a special permit for the area they hunted was "Not important to Not at all Important". However, 48% of the resident hunters felt it was "Important to Very Important". There is insufficient information available to compare with the 1988 study.

Graph 11



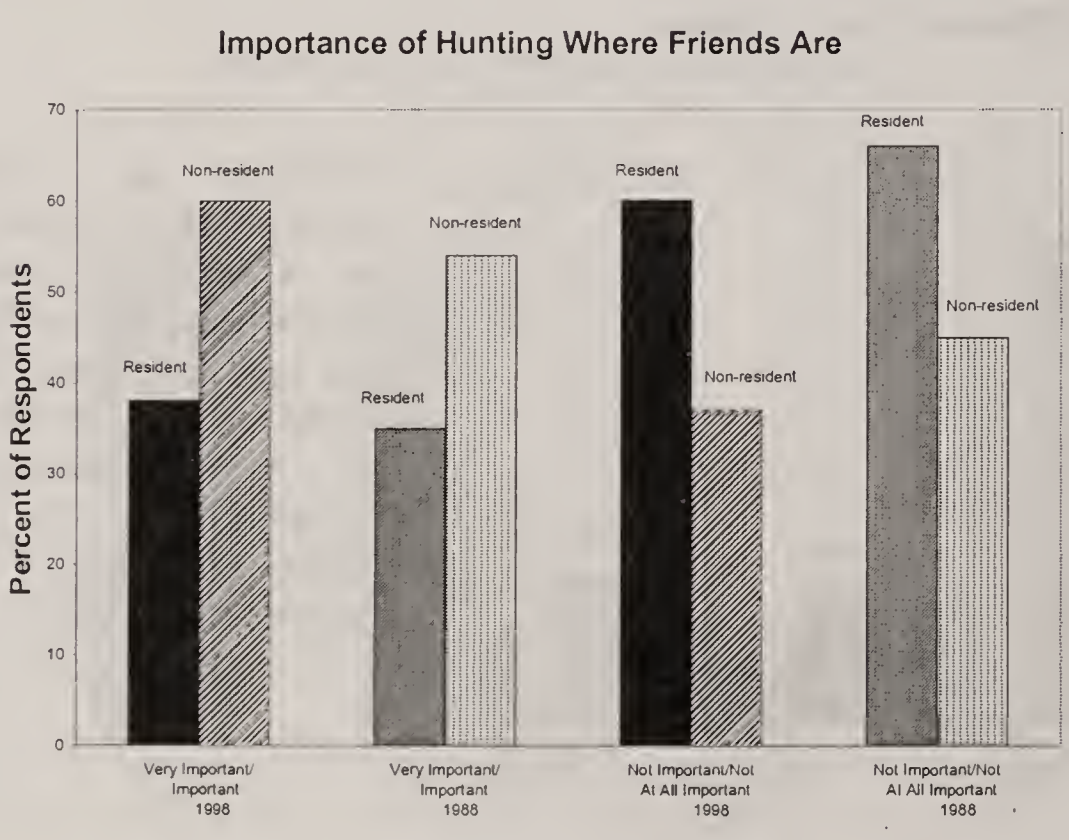
Views on the importance of hunting in a natural setting haven't changed in the last ten years, with 78% of the resident and 88% of the non-resident hunters rating it as "Very Important to Important" in 1998.

Graph 12



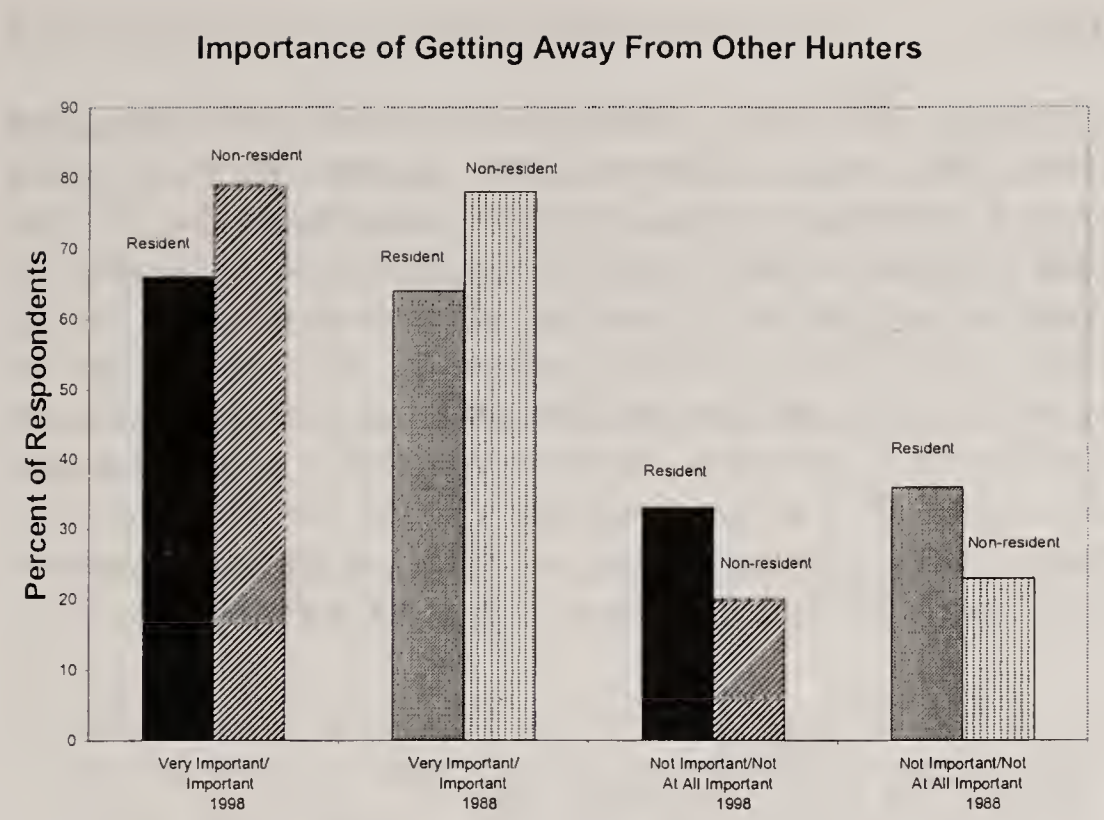
Hunting with family members is more important to resident hunters than to non-resident hunters. Sixty nine percent (69%) of the resident hunters in 1998 felt it was "Very Important to Important", while 51% of the non-resident hunters felt the same, compared to 58% of the resident hunters and 40% of the non-resident hunter in 1988.

Graph 13



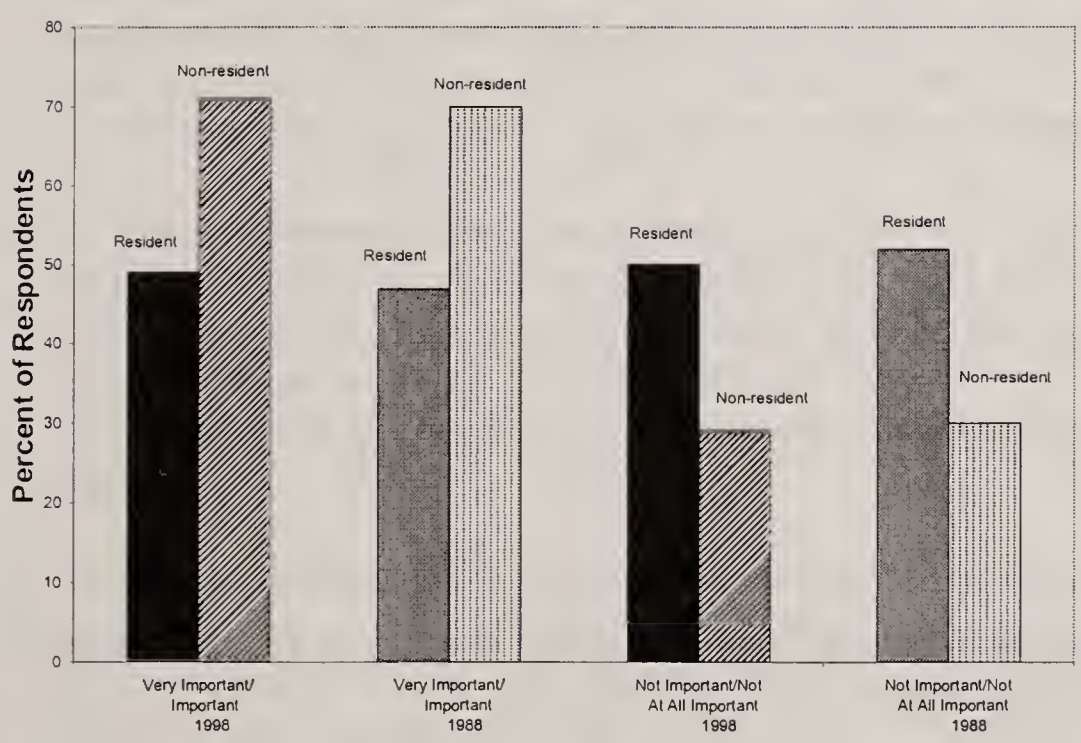
Only 38% of the resident hunters felt it was "Very Important to Important" to hunt where friends were hunting, compared to 60% of the non-resident hunters in the 1998 study. The 1988 study showed the same pattern, with 35% of resident and 54% of non-resident hunters feeling the same.

Graph 14



A majority of resident hunters (66%) and non-resident hunters (79%) rated getting away from other hunters" as "Important to Very Important" in the 1998 study, which is also the case with the hunters surveyed in 1988, where the resident hunters (64%) and the non-resident hunters (78%) felt the same.

Graph 15



Interestingly, in both the 1998 and 1988 study the non-resident hunters rated the importance of being in rugged country significantly higher than did the resident hunters. Resident hunters were evenly divided as to the importance. In 1998, 49% of the resident and 71% of the non-resident hunters rated the importance of being in rugged country as "Very Important to Important".

Graph 16

TRIP CHARACTERISTICS

The trips which the hunters in the four classifications (resident/nonresident and guided/non-guided) took also show many differences. The average number of miles traveled by all hunters was 693, residents averaged 104 miles, slightly less than the 121 miles traveled in 1988, while non-residents averaged 1224 miles, almost double the 742 miles traveled in 1988. Table 5 also shows how the average number of elk seen, hunters seen, and days the trip lasted varied across the hunter subgroups. Non-resident guided hunters tended to see more elk on their trips than resident and non-guided non-resident hunters. It appears that the degree of perceived hunter congestion was stable across hunter groups. Forty four percent (44%) of the respondents stated that the number of other hunters seen was about what they expected to see, and (75%) of all the respondents stated that the other hunters did not affect their enjoyment of hunting in the area.

Table 5
MONTANA ELK HUNTING--1998
Trip Characteristics

Characteristic	Resident	Resident Guided	Non-resident	Non-resident Guided
Avg. Number of Miles Traveled	104	* -	1224	1531
% Who Killed Other Big Game	19%	-	25%	22%
Avg. Number of Elk Seen	50	-	48	58
Avg. Number of Days Per Trip	3	-	8	7
Avg. Number of Other Hunters Seen	15	-	21	9
% Saying Number of Hunters was More Than Expected	22%	-	23%	22%

*With only 1.5% of the resident hunters surveyed using the services of an outfitter/guide there was insufficient data for comparison.

HUNTER MANAGEMENT PREFERENCES

Hunters were asked to answer several questions concerning their perception of elk management in Montana. Resident hunters were much more likely than non-resident hunters to say that there were too many hunters in their hunting areas. A majority of all respondents (85%) stated that this area was the main place they hunted on this trip away from home, with 65% saying they have hunted this area before.

Note: In 1988, 84% stated that the area was the main place they hunted on this trip away from home.

- 93% said that hunting was the main reason for taking the trip. (This was the same as in the 1988 study)

- 26% said it was their favorite place to hunt, 40% of the hunters rated the area they hunted as one of their favorite places to hunt, while 24% said it was one of many places they hunt and 10% said they prefer to hunt other places. (The 1988 study showed that 27% said they were hunting their favorite area in Montana, 39% said it was one of their favorites, 25% said it was one of many places they hunt, and 8% said they prefer to hunt elsewhere).

- 78% said the number of roads for vehicle use in the area was about right. Ten percent (10%) said there was too few and 11% said there were too many roads for hunting purposes. (In 1988 fewer (68%) said the number of roads for vehicle use in the area was about right, the same amount (10%) said there was too few and a less number (22%) said there were too many roads for hunting purposes).

- 39% thought the number of open roads in the area has remained about the same, 22% thought the number of open roads had decreased, 4% thought they had increased and 35% weren't sure. (Compared to 33% who thought the number of open roads in the area had remained about the same, 24% who thought the number of open roads had decreased, 13% who said they had increased and 28% who weren't sure in the 1988 study).

- 51% of the respondents thought that hunters should be allowed to use only open roads to retrieve game with a vehicle, 32% felt closed roads should be used to retrieve game with a vehicle, and 18% felt vehicles should be allowed off roads to retrieve game. (More of the respondents in the 1988 study (53%) thought that hunters should be allowed to use only open roads to retrieve game with a vehicle, fewer (31%) felt closed roads should be used to retrieve game with a vehicle, and more (22%) felt vehicles should be allowed off roads to retrieve game).

- 66% of the hunters stated they planned to hunt the same area in the future, 11% plan to hunt the area more frequently, and 23% thought they would hunt less frequently than they do now. (In 1988 63% of the hunters stated they planned to hunt the same area in the future, 15% plan to hunt the area more frequently, and 19% thought they would hunt less frequently than they do no).

- 53% felt there are other hunting areas in Montana that provided a hunting experience comparable to the particular area they usually hunted, while 47% said no other area compared. (In 1988 63% felt there are other hunting areas in Montana that provided a hunting experience comparable to the particular area they usually hunted).

- 26% said hunting in the alternate area was about the same as where they hunted, while 13% said the hunting was worse, and 11% said it was better. (In 1988 many more respondents (42%) said that hunting in the alternate area was about the same as where they hunted, while about the same (13%) said the hunting was worse, and more respondents (16%) said it was better).

- 30% of the hunters who'd hunted in the area before said it was their favorite area, compared to just 17% of the first-time area visitors. (In 1988 32% of the hunters who'd hunted in the area before said it was their favorite area, compared to just 14% of the first-time area visitors).

HUNTER EXPENDITURE DATA

Table 6 shows that resident hunters spent an average of $141.59 for transportation, food, and equipment on an average trip of three days. This translates to an expenditure of $47.20 per day. Non-residents, who's average trip was eight days, and guided hunters paid substantially more per day for their hunting trips because of the long distances which they traveled, the added necessity for overnight lodging and guide fees. Non-residents spent $1659.33 per trip, non-resident guided hunters spent $3824.72.

The 1988 study showed that resident hunters spent an average of $81.14 on a two day hunt ($40.57 per day). Non-resident hunters spent $1399.12 ($186.56 per day) on their last hunting trip, which was 7 1/2 days. (A comparison table is shown in Appendix C.)

Not surprisingly, non-residents spent significantly more for their hunting trips than did residents. There were also significant differences between the residents' and non-residents' average incomes.

Table 6
MONTANA ELK HUNTING--1998
Trip Expenditures by Hunter Subgroup

Category	Average Resident	Average Resident Guided	Average Non-Resident	Average Non-Resident Guided
Transportation	$ 47.79	- *	$ 392.96	$ 524.91
Food/Lodging	$ 41.70	-	$ 331.29	$ 560.44
Equipment/Access & Guide Fees	$ 52.10	-	$ 935.08	$2739.37
Total	$141.59	-	$1659.33	$3824.72
Per Day Expenditures	$ 47.20	-	$ 207.42	$ 478.09

* With only 1.5% of the resident hunters using the services of an outfitter/guide, there is not sufficient data for a comparison.

- 71% of the resident hunters and 52% of the non-resident hunters said the trip was worth more than they actually spent. Suprisingly, the 1988 figures were the same.

Contingent Valuation Method (CVM) ANALYSIS

Net economic value is defined here as net willingness to pay; the difference between the maximum an individual would be willing to pay before foregoing the use of a resource or recreational opportunity and the amount they must actually pay. Many federal agencies are required by the U.S. Water Resource Council Principles and Guidelines to use the net willingness to pay concept to measure the economic value of both marketed and nonmarket goods.

The basic approach used to estimate net economic value was the Contingent Valuation Method (CVM). This is one of two basic methods that are recommended by the Water Resources Council for valuing recreation. (The other is the travel cost method.) The CVM method uses survey techniques to ask people about the values they would place on nonmarket commodities if markets did exist. Two specific versions of the CVM method were employed: open-ended and dichotomous choice.

- In the open-ended CVM approach individuals were asked "What is the maximum increase in your actual trip cost you would have paid to hunt this specific area instead of hunting elsewhere?"
- In the dichotomous choice approach, individuals were asked ".....would you still have made the trip if your share of the expenses had been (dollar bid amount) more? ___ yes or ___no."

In this survey the bid amount was randomly varied from $25 to $2000 and respondents indicated a yes or no response. Similar questions were developed to identify net economic values for double the chance of getting a 6-point or better bull elk and of seeing half as many hunters.

The analysis of the open-ended CVM is fairly simple; one merely calculates the mean of the dollar responses. One problem with this method is in interpreting extreme values: either zero response or very high values. Another problem is that respondents may find it a difficult question to answer. By contrast, the dichotomous choice question requires only a yes or no to a given dollar amount. The disadvantage of the dichotomous choice approach is that a fairly complex analysis is required in order to determine net willingness to pay. Basically, the data is used to estimate how the probability of a "yes" response varies with the bid amount. The analysis reported below assumed a standard logistic probability distribution function; accordingly the specific dichotomous choice model estimated here is conventionally referred to as a logit model. The mean net willingness to pay is derived by integrating the logit function from zero to the upper limit of sample bids (in this case $2000).

CVM RESULTS

When hunters were asked if their most recent trip was worth more than they actually spent, 61% of all the respondents (71% of the residents and 52% of the non-residents) stated yes. The economic value hunters placed on these hunting opportunities is substantial. Tables 7 and 8 present an evaluation of the quantitative dimensions of elk hunting in Montana. Hunter motivations and preferences for different hunting experiences influence the satisfaction and economic value received by persons hunting elk in Montana.

Two estimates of average willingness to pay are provided for three different scenarios. Scenario one, elk hunters were asked to value their most recent elk hunting trip to the same area. Scenario two, elk hunters were asked to value the opportunity to double their chance of taking a 6-point or better bull elk. Scenario three, they were asked to value the possibility of seeing half as many hunters as they actually saw. Table 7 provides the results of the dichotomous choice CVM results. Median values are also presented for added information.

KEY:	
MEAN-LOGIT:	Mean from the logit model, with the truncation set at the maximum bid of $2,000.
MEAN-OE.CVM:	Mean of the hunter's response to the open-ended willingness to pay question.
MEDIAN-LGT:	The median of the logit equation = EXP (-CONSTANT / VAR. COEFF.)

Table 7
MONTANA ELK HUNTING
Dichotomous CVM Results

Most Recent Trip – Was your most recent trip worth more than you actually paid?

	Resident Average	**Res. Avg. Cost per Day**	**Non-Resident Average**	**Non-Res. Avg. Cost per Day**	**Statewide Average**	**Statewide Avg. Cost per Day**
Mean Logit	$311	$104	$931	$116	$617	$88
Median Logit	$135	$45	$673	$84	$303	$43

Double the Chance of Taking 6-Point or Better Bull – how much would you be willing to pay to double your chances of taking a 6-point or better bull elk?

Mean Logit	$370	$123	$693	$87	$588	$84
Median Logit	$71	$24	$361	$45	$230	$33

To See Half as Many Hunters – how much would you be willing to pay to see half as many hunters as you actually saw on your most recent trip?

Mean Logit	$365	$122	$459	$57	$465	$66
Median Logit	$96	$32	$142	$18	$196	$28

Both resident and nonresident hunters were willing to pay an additional $311 and $931per trip respectively for the opportunity to hunt elk based on their most recent trip experiences.

Resident hunters were willing to pay more to double their chance of taking a 6-point or better bull and of seeing half as many hunters than the amount they would pay for their most recent trip. This indicates that living in Montana affords them the opportunity to be in close proximity to their hunting area therefore they can concentrate on getting a bigger elk and prefer the solitude of not seeing too many other hunters.

Nonresidents, on the other hand, did not feel that these two hunting opportunities were worth more than their most recent trip, which could indicate that these hunters didn't feel the area was overcrowded or that their chances of killing a six point bull elk were poor.

Respondents were also asked what the maximum amount (open-ended question) they would be willing to pay, above and beyond the actual cost of their hunting trip to hunt elk in this area. Table 8 shows the amount the complete sample of hunters, as well as the resident and non-resident hunters indicated they would be willing to pay for their most recent trip, to double their chance of taking a 6-point or better bull, and to see half as many hunters. Non-resident hunters were willing to pay substantially more than resident hunters for the same experiences.

Table 8
1998 MONTANA ELK HUNTING
Maximum Increase Hunters Are Willing to Pay (Open-Ended)

	Mean =Open-ended Per Trip	**Mean = Open-ended Per Day**
Most Recent Trip		
Resident	$124	$41
Non-resident	$527	$66
Complete Sample	$305	$44
Double Chance of Taking 6-pt. Bull		
Resident	$175	$58
Non-resident	$547	$68
Complete Sample	$376	$54
See half as Many Hunters		
Resident	$110	$36
Non-resident	$299	$37
Complete Sample	$200	$29

* Based on 3/day trip for residents and 8/day trip for nonresidents.

COMPARISON OF 1998 AND 1988 SURVEY RESULTS

The 1998 Elk Hunter Survey was designed to provide comparable information to the 1988 study regarding all aspects of the elk hunters' trip. Hunters were asked the same questions, in 1998 and 1988, regarding how much they valued their current trip as well as estimates on what they would be willing to pay for improving their chances of killing a six point bull or seeing fewer hunters. The following discussion details the differences in hunters' responses between 1998 and 1988. Since the willingness to pay (CVM and Open-Ended) analysis was not broken down by residency in 1988, the following comparisons were made based on the whole sample.

Looking at the results of the dichotomous choice Contingent Valuation Method (CVM), elk hunters were willing to pay an additional $262 per trip based on the mean logit in 1988. In 1998, elk hunters were willing to pay an additional $617 per trip; more than twice the value hunters placed on their hunting trips in 1988.

The amount elk hunters were willing to pay to double their chances of taking a 6-point or better bull elk did not quite double between 1988 and 1998; increasing from $345 to $588. The value hunters placed on seeing half as many hunters as they actually did on their most recent trip went from $259 in 1988 to $465 in 1998 or almost double.

The open-ended results show the same pattern as the dichotomous choice with hunters placing a higher value on their 1998 hunt compared to 1988. (See Appendix C for the actual values.)

APPENDIX

APPENDIX A

SURVEY INSTRUMENT

Thanks again. If you would like to receive a copy of the survey results, please write "Results requested" and your address on the back of the return envelope (not on the questionnaire).

MONTANA

ELK HUNTING SURVEY

1998

Montana Fish, Wildlife & Parks

I. FIRST, WE HAVE SOME GENERAL QUESTIONS ABOUT YOUR HUNTING.

1. How many years have you been hunting elk? _____ Years

2. About how many days per year do you hunt elk? _____ Days

3. How many of these days are spent in Montana? _____ Days

4. How would you rate elk hunting compared to your other outdoor recreation activities? (please check one)

_____ It's my favorite outdoor recreation activity

_____ It's one of my favorite outdoor recreation activities

_____ It's just one of several outdoor recreation activities that I do

_____ I prefer other outdoor recreation activities

II. THE NEXT QUESTIONS ASK ABOUT YOUR MOST RECENT ELK HUNTING TRIP IN MONTANA DURING THE GENERAL SEASON.

1. Approximate date(s) of this last trip: _____
(A trip could be anything from an hour to several or more days)

2. Use the map provided to show what HUNTING DISTRICT you visited on this trip. (If you hunted in more than one district, write the number of the ONE district where you spent the most time)

Number of hunting district: _____
(from map on back of the cover letter)

IN ALL OF THE FOLLOWING QUESTIONS, "THIS AREA" MEANS THE DISTRICT WHOSE NUMBER YOU JUST LISTED.

3. On this trip, how many days did you hunt in this area? _____ Days

4. About how many hours per day did you hunt? _____ Hours

5. About how many elk did you see while hunting in this area?

_____ Elk seen in this area

6. Did you kill an elk in this area? ___ Yes ___ No

7. If yes, what kind did you get?

___ Antlered ___ Antlerless

If your elk was antlered, how many points did it have on each side?

Points on side 1 : ____ Points on side 2 : ____

7a. District number where elk was killed (from map): _____

8. Did you get any other big game in this hunting area?

___ Yes ___ No

9. If yes, what species did you shoot?

___ Mule deer ___ White-tailed deer

___ Bear ___ Other: _____

10. Was this area the only place you hunted on this trip, or did you hunt in other areas listed on the map? (Please check one)

___ This area was the main or only one I hunted on this trip away from home.

___ This area was one of several areas I hunted in on this trip.

11. If you did hunt in other areas on this trip, please list the area numbers from the map :

_____

12. What type of equipment did you use in this area? (please check all that apply)

___ Muzzle loader ___ Rifle ___ Bow and arrow

13. Did you hire a hunting guide or outfitter in this area?

___ Yes ___ No

14. Was hunting the main purpose of your trip away from home when you hunted in this area or did you make the trip for other reasons such as business or a family vacation? (please check one)

___ Hunting was the main purpose of this trip

___ Hunting was one of several reasons for making the trip

15. Which of the following items did you use while hunting in this area? (please check all items you used)

___ Dirt bike or ATV
___ Horse
___ Binoculars
___ Topographic map
___ Backpacking tent
___ Trailer
___ Wall tent
___ Snowmobile
___ Elk bugle
___ Camera
___ Spotting scope
___ Motor home

16. About how far did you walk while you were hunting in this area? (please use an average if you hunted more than a day)

___ Miles / Day

17. About how many other hunters (not in your party) did you see while you were hunting this area on this trip?

___ Other hunters

18. Was this number of hunters : (please check one)

___ More than I expected to see

___ About as many as I expected to see

___ Fewer than I expected to see

___ I didn't have any expectations

19. Did the other hunters present affect your enjoyment of the hunting in this area?

___ Yes ___ No

20. If yes, please explain how :

_____

21. Was this the first time you hunted in this particular area?

___ Yes ___ No, I've hunted here before

22. If no, how many years have you been hunting in this area?

____ Years

23. How does this area rate compared to other areas in Montana? (please check one)

___ It's my favorite place to hunt

___ It's one of my favorite places to hunt

___ It's one of many places where I hunt

___ I prefer to hunt other places

24. For hunting purposes, do you feel the number of roads for vehicle use in this area is: (please check one)

___ Too few

___ About right

___ Too many

25. In the last few years, has the number of open roads in this area increased, decreased, or stayed the same? (check one)

___ Number of open roads in this area has increased

___ Number of open roads in this area has decreased

___ Number of open roads in this area is the same

___ I'm not sure

26. For game retrieval purposes, how do you feel the existing roads in this area should be managed? (please check one)

___ Hunters should be allowed to use only open roads to retrieve game with a vehicle

___ Hunters should be allowed to use closed roads to retrieve game with a vehicle

___ Hunters should be allowed to use vehicles off roads to retrieve game

27. How many separate trips did you make from your home to this hunting area this season?

___ Separate trips from home this year

28. About how frequently do you plan to hunt in this area in the future? (please check one)

___ As frequently as I do now

___ More frequently than I do now

___ Less frequently than I do now

29. Are there any other hunting areas in Montana that you feel provide a hunting experience comparable to this particular area?

___ Yes ___ No

30. If yes, please list the numbers of any other comparable hunting areas from the map?

_____

31. Suppose you were told you could not hunt elk in this district on this trip, What other district might you have hunted instead?

Please specify hunting district number from map : _____

32. About how far is it from your home to this alternative hunting location?

___ Miles

33. How does it compare to hunting where you did?

_____

34. People hunt for many reasons. We'd like to know some of the reasons you hunted this area on this trip, to help us understand different types of hunters and their preferences.

Following is a list of possible reasons for hunting. Please check the box that says whether that reason was very important, important, not very important, or not at all important a reason you hunted in this particular area on this trip.

	Very Important	Important	Not Important	Not at all Important	Not Sure
1. Good road access	☐	☐	☐	☐	☐
2. For the solitude	☐	☐	☐	☐	☐
3. Because there are lots of elk there	☐	☐	☐	☐	☐
4. To test my hunting skills	☐	☐	☐	☐	☐
5. It's close to home	☐	☐	☐	☐	☐
6. To get a trophy elk	☐	☐	☐	☐	☐
7. To be outdoors	☐	☐	☐	☐	☐
8. I've had good hunting there	☐	☐	☐	☐	☐
9. For the meat	☐	☐	☐	☐	☐
10. To view the scenery	☐	☐	☐	☐	☐
11. Because I had a special permit for the area	☐	☐	☐	☐	☐
12. To be in a natural setting	☐	☐	☐	☐	☐
13. To hunt with family members	☐	☐	☐	☐	☐
14. It's where my friends were going	☐	☐	☐	☐	☐
15. To get away from other hunters	☐	☐	☐	☐	☐
16. To be in rugged country	☐	☐	☐	☐	☐

17. Could you please look back over this list and circle the numbers of the **three** most important reasons you hunted in this area on this trip?

III. THE NEXT FEW QUESTIONS WILL HELP US TO UNDERSTAND THE VALUE YOU PLACE ON HUNTING IN THIS AREA.

WE REALIZE YOU AREN'T USED TO CONSIDERING HUNTING THIS WAY, BUT PLEASE THINK ABOUT IT AND GIVE US YOUR BEST ESTIMATE!

1. About how far is it from your home to where you hunted in this area on this trip?

___ Miles (one-way)

2. How long did it take to travel from your home to this area?

___ Hours (include any stops made en route)

3. If you drove, how many other hunters were in the vehicle?

___ Number of other hunters

4. About how much did you personally spend on this trip? If you can't recall the exact amount, please give your best estimate for each of the following three types of expenses.

_____ Amount I spent for transportation (gas, car rental, airfare and any other transportation costs)

_____ Amount I spent on food, beverages, and lodging

_____ Amount I spent on equipment purchased just for this trip, access or guide fees, and all other expenses

_____ TOTAL AMOUNT I SPENT ON THIS HUNTING TRIP

5. Was this trip worth more than you actually spent?

___ Yes ___ No

6. If YES, would you still have made the trip if your share of the expenses had been $ 250 more?

___ Yes ___ No

7. What is the maximum increase in your actual trip cost you would have paid to hunt this specific area instead of hunting elsewhere?

_____ Dollars

8. If your answer was zero, could you briefly explain why?

_____

9. Imagine that everything about this last trip was the same, except your chances of getting a 6-point or better bull elk were twice as great AND your trip costs to visit this site were $ 500 more than your actual costs. Would you still have made the trip under these circumstances?

___ Yes, I would still have made the trip.

___ No, I would not have made the trip.

10. What is the maximum increase in actual trip costs you would pay to double your chances of getting a 6-point or better bull elk?

_____ Dollars increase in trip cost

11. If your answer was zero, could you briefly explain why?

_____

12. Imagine that everything about this last trip was the same, except that you saw half as many hunters as you actually did AND your trip costs were $ 1000 more than they actually were. Would you still have made the trip under these circumstances?

___ Yes, I would still have made the trip.

___ No, I would not have made the trip.

13. What is the maximum increase in actual trip costs you would pay to reduce by half the number of hunters you saw while hunting in this area?

_____ Dollars increase in trip cost

14. If your answer was zero, could you briefly explain why?

_____

IV. THESE LAST FEW QUESTIONS WILL HELP US UNDERSTAND YOUR RESPONSES BY KNOWING SOME BASIC INFORMATION ABOUT YOU.

1. Where are you from? City: _____ State : _____

2. What is your age? _____ Years

3. Are you: ___ Male ___ Female

4. Are you a member of any hunting, conservation, or sport organizations?

___ Yes ___ No

5. If so, which ones?_____

6. What is the highest year of formal education you completed?

___ Some grade school ___ Some college

___ Finished grade school ___ Finished college

___ Finished junior high school ___ Some postgraduate work

___ Finished high school ___ Finished postgraduate

7. If you had not gone hunting this trip, would you have been working instead?

___ Yes ___ No

8. During the hunting season this year, were you ? (check one)

___ Employed full time ___ Retired

___ Employed part time ___ Homemaker

___ Unemployed ___ Other : _____

9. Please check your household's income before taxes last year :

___ Under 5,000 ___ 20,000 - 24,999 ___ 40,000 - 49,000

___ 5,000 - 9,999 ___ 25,000 - 29,999 ___ 50,000 - 74,999

___ 10,000 - 14,999 ___ 30,000 - 34,999 ___ 75,000 - 100,000

___ 15,000 - 19,999 ___ 35,000 - 39,999 ___ over 100,000

Thank you for your help. Is there anything else you'd like to tell us about hunting in this area? We would appreciate any comments.

APPENDIX B

MEAN/MEDIAN VALUES FOR VARIABLES

MEAN/MEDIAN VALUES FOR VARIABLES (1998)

Note: Comparisons by residency and guided/not guided or for the complete sample were not calculated for each question.

	MEAN	MEDIAN
How many years have you been hunting elk?		
Complete sample	15	11
Montana residents	18	18
Non-residents	12	7
Hired outfitter/guide	8	5
Didn't hire outfitter/guide	16	13
About how many days per year do you hunt elk?		
Complete sample	10	8
Montana residents	11	10
Non-residents	10	8
Hired outfitter/guide	8	7
Didn't hire outfitter/guide	11	10
How many of these days are spent in Montana?		
Complete sample	10	8
Montana residents	11	10
Non-residents	10	8
On this trip, how many days did you hunt in this area?		
Complete sample	7	6
Montana residents	6	4
Non-residents	8	7
Hired outfitter/guide	7	6
Didn't hire outfitter/guide	7	6
About how many hours per day did you hunt?		
Complete sample	8	8
Montana residents	8	8
Non-residents	9	8
About how many elk did you see while hunting in this area?		
Montana residents	50	20
Non-residents	48	20
Hired outfitter/guide	57	20
Didn't hire outfitter/guide	47	20
About how far did you walk while you were hunting in this area?		

Complete sample	6	5
Montana residents	6	5
Non-residents	6	5

MEAN/MEDIAN VALUES FOR VARIABLES (con'd)

	MEAN	MEDIAN
About how many other hunters did you see while you were hunting this area on this trip?		
Complete sample	18	8
Montana residents	15	8
Non-residents	21	10
Hired outfitter/guide	9	6
Didn't hire outfitter/guide	19	10
How many years have you been hunting in this area?		
Montana residents	10.5	6
Non-residents	6	4
How many separate trips did you make from your home to this hunting area this season?		
Montana residents	5	3
Non-residents	1	1
About how far is it from your home to this alternative hunting location?		
Montana residents	113	70
Non-residents	1131	1000
About how far (miles one-way) is it from your home to where you hunted in this area on this trip?		
Complete sample	693	350
Montana residents	104	60
Non-residents	1224	1100
Hired outfitter/guide	1462	1475
Didn't hire outfitter/guide	562	220
How long (hours) did it take to travel from your home to this area?		
Montana residents	3	2
Non-residents	20	16
Hired outfitter/guide	18	12
Didn't hire outfitter/guide	11	5

MEAN/MEDIAN VALUES FOR VARIABLES (con'd)

	MEAN	MEDIAN
About how much did you spend on this trip for transportation?		
Montana residents	56	30
Non-residents	436	300
Amount spent for food, beverages, and lodging.		
Montana residents	58	30
Non-residents	382	200
Amount spent on equipment purchased just for this trip, access of guide fees, and all other expenses.		
Montana residents	126	50
Non-residents	1137	500
Total amount spent on this hunting trip.		
Complete sample	1143	500
Montana residents	156	75
Non-residents	1941	1300
What is the maximum increase in your actual trip cost you would have paid to hunt this specific area instead of hunting elsewhere?		
Montana residents	120	50
Non-residents	494	250
Hired outfitter/guide	714	400
Didn't hire outfitter/guide	250	100
What is the maximum increase in actual trip costs you would pay to double your chances of getting a 6-point or better bull elk?		
Montana residents	171	100
Non-residents	532	425
Hired outfitter/guide	805	500
Didn't hire outfitter/guide	298	200
What is the maximum increase in actual trip costs you would pay to reduce by half the number of hunters you saw while hunting in this area?		
Montana residents	106	50
Non-residents	291	200
Hired outfitter/guide	387	250
Didn't hire outfitter/guide	179	100

APPENDIX C

COMPARISONS FOR 1998 AND 1988 TRIP EXPENDITURES AND DICHOTOMOUS CVM AND OPEN-ENDED WILLINGNESS TO PAY TABLES

MONTANA ELK HUNTING
1998 AND 1988 COMPARISON (Table 6)
TRIP EXPENDITURES

CATEGORY	AVERAGE RESIDENT		AVERAGE NON-RESIDENT	
	1998	1988	1998	1988
Transportation	$ 47.79	$ 44.05	$ 392.96	$ 384.42
Food/Lodging	$ 41.70	$ 48.40	$ 331.29	$ 291.66
Equipment/Access & Guide Fees	$ 52.10	$ 37.21	$ 935.08	$ 723.05
Total	$141.59	$ 81.14	$1659.33	$1399.12

MONTANA ELK HUNTING
1998 AND 1988 COMPARISON (Tables 7 & 8)
INCREASE HUNTERS ARE WILLING TO PAY
BASED ON THE COMPLETE SAMPLE

	DICHOTOMOUS CVM		*OPEN-ENDED*	
	1998	1988	1998	1988
MOST RECENT TRIP				
MEAN	$617	$262	$305	$94
MEDIAN	303	72	xxx	xxx
DOUBLE CHANCE OF TAKING 6-PT OR BETTER BULL ELK				
MEAN	$588	$345	$376	$120
MEDIAN	230	135	xxx	xxx
SEE HALF AS MANY HUNTERS				
MEAN	$465	$259	$200	$99
MEDIAN	196	85	xxx	xxx

Note: (xxx) median is not available